

AUG 17 1998

**GROUP
1634**

CLOSURE
AUG 17 1998
PATENT & TRADEMARK OFFICE 825 S. P

U.S. PATENT DOCUMENTS

[illegible]

FOREIGN PATENT DOCUMENTS

[illegible]

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER	<i>S. Hunt</i>	DATE CONSIDERED <i>9/98</i>

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION

PTO-1449

ATTY. DOCKET NO.
A-64558-1/RFT/RMSSERIAL NO.
08/873,597APPLICANT
Kayyem, et al.FILING DATE
June 12, 1997GROUP
Not Assigned

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS		PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
W S4	A	4,707,352	11/17/87	Stavrianopoulos			
	B	4,707,440	11/1987	Stavrianopoulos	435	6	
	C	4,711,955	12/8/87	Ward, et al.			
	D	4,755,458	7/5/88	Rabbani, et al.			
	E	4,849,513	7/18/89	Smith, et al.	536	27	
	F	4,868,103	9/19/89	Stavrianopoulos, et al.			
	G	4,894,325	1/16/90	Englehardt, et al.			
	H	4,943,523	7/24/90	Stavrianopoulos			
	I	4,952,685	8/28/90	Stavrianopoulos			
	J	4,994,373	2/19/91	Stavrianopoulos			
	K	5,002,885	3/26/91	Stavrianopoulos			
	L	5,013,831	5/7/91	Stavrianopoulos			

FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS		PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
							Yes	No
W S4	M	0 63879	11/3/82	Europe				
	N	9 210 757	6/25/92	PCT (WO)				
	O	9 515 971	6/15/95	PCT (WO)				
	P	0 234938	2/26/87	EP (A2)				

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

W S4	1	Alleman, K.S., et al., "Electrochemical Rectification at a Monolayer-Modified Electrode," <i>J. Phys. Chem.</i> , 100:17050-17058 (1996).					
W S4	2	Arkin et al. "Evidence for Photoelectron Transfer Through DNA Intercalation," <i>J. Inorganic Biochem. Abstracts</i> , 6th International Conference on Bioinorganic Chemistry, 51(1) & (2):526 (1993).					

EXAMINER

DATE CONSIDERED

9-28-98

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION



PTO-1449

ATTY. DOCKET NO.
A-64558-1/RFT/RMS

SERIAL NO.
08/873,597

APPLICANT
Kayyem, et al.

FILING DATE
June 12, 1997

GROUP
Not Assigned

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS		PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
MSH	Q	5,082,830	1/21/92	Brakel, et al.			
	R	5,175,269	12/29/92	Stavrianopoulos			
	S	5,241,060	8/31/93	Englehardt, et al.			
	U	5,278,043	1/11/95	Bannwarth, et al.	536	23.1	
	U	5,312,527	5/17/94	Mikkelsen, et al.	204	153.12	
	V	5,328,824	7/12/94	Ward, et al.			
	W	5,449,767	9/12/95	Ward, et al.-			
	X	5,472,881	12/95	Beebe, et al.	436	94	
	Y	5,476,928	12/19/95	Ward, et al.			
	AA	5,495,908	1/21/97	Fawcett, et al.	534	11	
	AA	5,565,552	10/15/96	Magda, et al.	534	11	
	BB	5,573,906	11/12/96	Bannwarth, et al.	435	6	
	CC	5,591,578	1/7/97	Meade, et al.	435	6	
	DD	5,601,982	2/1997	Sargent, et al.	435	6	

FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS		PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
							Yes	No
MSH	EE	9 310 267	5/27/93	PCT (WO)				
	FF	2 090904	9/24/93	CANADA				
	GG	0 599337	1/16/94	EPO				
	HH	238,166.0	7/1988	JP (Abstract (63-238166))				
	II	0 229943	7/29/87	EP				
	JJ	9 640712	12/19/96	WO				

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

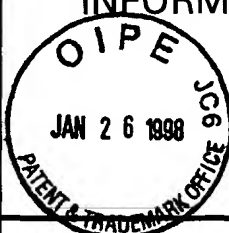
EXAMINER




DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and


INFORMATION DISCLOSURE CITATION PTO-1449		ATTY. DOCKET NO. A-64558-1/RFT/RMS	SERIAL NO. 08/873,597
		APPLICANT Kayyem, et al.	
		FILING DATE June 2, 1997	GROUP Not Assigned
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
56		Barisci, et al., "Conducting Polymer Sensors," <i>TRIP</i> , 4(9):307-311 (1996).	
	4	Baum, R. M., "Views on Biological, Long-Range Electron Transfer Stir Debate," <i>C&EN</i> , pp 20-23 (1993).	
	5	Bechtold, R., et al., "Ruthenium-Modified Horse Heart Cytochrome c: Effect of pH and Ligation on the Rate of Intramolecular Electron Transfer between Ruthenium(II) and Heme(III)," <i>J. Phys. Chem.</i> , 90(16):3800-3804 (1986).	
	6	Bidan, "Electroconducting conjugated polymers: new sensitive matrices to build up chemical or electrochemical sensors. A Review.," <i>Sensors and Actuators</i> , B6:45-56 (1992).	
	8	Biotechnology and Genetics: Genetic Screening Integrated Circuit," <i>The Economist</i> (February 25-March 3, 1995).	
	8	Boguslavsky, L. et al., "Applications of redox polymers in biosensors," <i>Solid State Ionics</i> , 60:189-197 (1993).	
	9	Bowler, B. E., et al., "Long-Range Electron Transfer in Donor (Spacer) Acceptor Molecules and Proteins," <i>Progress in Inorganic Chemistry: Bioinorganic Chemistry</i> , 38:259-322 (1990).	
	10	Brun, A. M., et al., "Photochemistry of Intercalated Quaternary Diazaaromatic Salts," <i>J. Am. Chem. Soc.</i> , 113:8153-8159 (1991).	
	11	Bumm, et al., "Are Single Molecular Wires Conducting?," <i>Science</i> 271:1705-1707 (1996).	
	12	Cantor, C.R. et al., "Report on the Sequencing by Hybridization Workshop," <i>Genomics</i> , 13:1378-1383 (1992).	
	13	Chang, I-Jy, et al., "High-Driving-Force Electron Transfer in Metalloproteins: Intramolecular Oxidation of Ferrocycytochrome c by Ru(2,2'-bpy) ₂ (im)(His-33) ³⁺ ," <i>J. Am. Chem. Soc.</i> , 113:7056-7057 (1991).	
	14	Chidsey, C.E.D., et al., "Free Energy and Temperature Dependence of Electron Transfer at the Metal Electrolyte Interface," <i>Science</i> , 251:919-923 (1991).	
	15	Chidsey, et al., "Coadsorption of Ferrocene-Terminated and Unsubstituted Alkanethiols on Gold" Electroactive Self-Assembled Monolayers," <i>J. Am. Chem. Soc.</i> , 112:4301-4306 (1990).	
EXAMINER		DATE CONSIDERED	
S. Howe		M. Smith 9/98	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION  PTO-1449		ATTY. DOCKET NO. A-64558-1/RFT/RMS	SERIAL NO. 08/873,597
		APPLICANT Kayyem, et al.	
		FILING DATE June 12, 1997	GROUP Not Assigned
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
5/1	16	Chrisey, et al., "Covalent attachment of synthetic DNA to self-assembled monolayer films," <i>Nucleic Acids Research</i> , 24(15):3031-3039 (1996).	
	17	Clery, "DNA Goes Electric," <i>Science</i> , 267:1270 (1995).	
	18	<i>Commerce Business Daily Issue of September 26, 1996 PSA#1688.</i>	
	19	DATABASE WPI, Derwent Publications Ltd., London, GB; AN 88-320199 & JP, A, 53 238 166 (MITSUBISHI DENKI KK), 4 October 1988.	
	20	Davis, L. M., et al., "Electron Donor Properties of the Antitumour Drug Amsacrine as Studied by Fluorescence Quenching of DNA-Bound Ethidium," <i>Chem.-Biol. Interactions</i> , 62:45-58 (1987).	
	21	Davis, L. M., et al., "Elements of biosensor construction," <i>Enzyme Microb. Technol.</i> 17:1030-1035 (1995).	
	22	Degani et al., "Direct Electrical Communication between Chemically Modified Enzymes and Metal Electrodes. 2. Methods for Bonding Electron-Transfer Relays to Glucose Oxidase and D-Amino-Acid Oxidase," <i>J. Am. Chem. Soc.</i> 110:2615-2620 (1988).	
	23	Degani, Y., et al., "Electrical Communication between Redox Centers of Glucose Oxidase and Electrodes via Electrostatically and Covalently Bound Redox Polymers," <i>J. Am. Chem. Soc.</i> , 111:2357-2358 (1989).	
	24	Degani, Y., et al., "Direct Electrical Communication between Chemically Modified Enzymes and Metal Electrodes. 1. Electron Transfer from Glucose Oxidase to Metal Electrodes via Electron Relays, Bound Covalently to the Enzyme," <i>J. Phys. Chem.</i> , 91(6):1285-1288 (1987).	
	25	Deinhammer, R.S., et al., "Electronchemical Oxidation of Amine-containing compounds: A Route to the Surface Modification of glassy carbon electrodes," <i>Langmuir</i> , 10:1306-1313 (1994).	
	26	Dreyer, G. B., et al., "Sequence-specific cleavage of single-stranded DNA: Oligodeoxynucleotide-EDTA-Fe(III)," <i>Proc. Natl. Acad. Sci. USA</i> , 82:968-972 (1985).	
	27	Durham, B., et al., "Photoinduced Electron-Transfer Kinetics of Singly Labeled Ruthenium Bis(bipyridin) Dicarboxybipyridine Cytochrome c Derivatives," <i>Biochemistry</i> , 28:8659-8665 (1989).	
WZ	28	Durham, B., et al., "Electron-Transfer Kinetics of Singly Labeled Ruthenium(II) Polypyridine Cytochrome c Derivatives," <i>American Chemical Society</i> , pages 181-193 (1990).	
EXAMINER		DATE CONSIDERED 9/98	

INFORMATION DISCLOSURE CITATION  PTO-1449		ATTY. DOCKET NO. A-64558-1/RFT/RMS	SERIAL NO. 08/873,597
		APPLICANT Kayyem, et al.	
		FILING DATE June 12, 1997	GROUP Not Assigned
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
MSA	29	Elias, H., et al., "Electron-Transfer Kinetics of Zn-Substituted Cytochrome <i>c</i> and Its Ru(NH ₃) ₅ (Histidine-33) Derivative," <i>J. Am. Chem. Soc.</i> , 110:429-434 (1988).	
	30	Farver, O., et al., "Long-range intramolecular electron transfer in azurins," <i>Proc. Natl. Acad. Sci. USA</i> , 86:6968-6972 (1989).	
	31	Fox, L. S., et al., "Gaussian Free-Energy Dependence of Electron-Transfer Rates in Iridium Complexes," <i>Science</i> , 247:1069-1071 (1990).	
	32	Fox, M. A., et al., "Light-Harvesting Polymer Systems," <i>C&EN</i> , pages 38-48 (March 15, 1993).	
	33	Francois, J-C., et al., "Periodic Cleavage of Poly(dA) by Oligothymidylates Covalently Linked to the 1,10-Phenanthroline-Copper Complex," <i>Biochemistry</i> , 27:2272-2276 (1988).	
	34	Friedman, A. E., et al., "Molecular 'Light Switch' for DNA: Ru(bpy) ₂ (dppz) ²⁺ ," <i>J. Am. Chem. Soc.</i> , 112:4960-4962 (1990).	
	35	Fromherz, P., et al., "Photoinduced Electron Transfer in DNA Matrix from Intercalated Ethidium to Condensed Methylviologen," <i>J. Am. Chem. Soc.</i> , 108:5361-5362 (1986).	
	36	Gardner, et al., "Application of conducting polymer technology in microsystems," <i>Sensors and Actuators</i> , A51:57-66 (1995).	
	37	Gregg, B. A., et al., "Cross-linked redox gels containing glucose oxidase for amperometric biosensor applications," <i>Anal. Chem.</i> , 62:258-263 (1990).	
	38	Gregg, B. A., et al., "Redox Polymer Films Containing Enzymes. 1. A Redox-Conducting Epoxy Cement: Synthesis, Characterization, and Electrocatalytic Oxidation of Hydroquinone," <i>J. Phys. Chem.</i> , 95:5970-5975 (1991).	
	39	Hashimoto, et al., "Sequence-Specific Gene Detection with a Gold Electrode Modified with DNA Probes and an Electrochemically Active Dye," <i>Anal. Chem.</i> 66:3830-3833 (1994).	
	40	Hegner, et al., "Immobilizing DNA on gold via thiol modification for atomic force microscopy imaging in buffer solutions," <i>FEBS</i> 336(3):452-456 (1993).	
	41	Heller, A., et al., "Amperometric biosensors based on three-dimensional hydrogel-forming epoxy networks," <i>Sensors and Actuators</i> , 13-14:180-183 (1993).	
EXAMINER		DATE CONSIDERED	
		 9/98	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION 		ATTY. DOCKET NO. A-64558-1/RFT/RMS	SERIAL NO. 08/873,597
		APPLICANT Kayyem, et al.	
		FILING DATE June 12, 1997	GROUP Not Assigned
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
WSA		Heller, A., "Electrical Wiring of Redox Enzymes," <i>Acc. Chem. Res.</i> , 23:128-134 (1990).	
	43	Heller et al., "Fluorescent Energy Transfer Oligonucleotide Probes," <i>Fed. Proc.</i> 46(6):1968 (1987) Abstract No. 248.	
	44	Ho "DNA-Mediated Electron Transfer and Application to 'Biochip' Development," <i>Abstract. Office of Naval Research</i> (Report Date: July 25, 1991) 1-4, RR04106.	
	45	Hobbs et al., "Polynucleotides Containing 2'-Amino-2'-deoxyribose and 2'-Azido-2'-deoxyribose," <i>Biochemistry</i> , 12(25):5138-5145 (1973).	
	46	Hsung, et al., "Synthesis and Characterization of Unsymmetric Ferrocene-Terminated Phenylethynyl Oligomers," <i>Organometallics</i> , 14:4808-4815 (1995).	
	47	Hsung, et al., "Thiophenol Protecting Groups for the Palladium-Catalyzed Heck Reaction: Efficient Syntheses of Conjugated Arylthiols," <i>Tetrahedron Letters</i> . 36(26):4525-4528 (1995).	
	48	Jenkins et al., "A Sequence-Specific Molecular Light Switch: Tebhering of an Oligonucleotide to a Dipyridophenazine Complex of Ruthenium (II), <i>J. Am. Chem. Soc.</i> , 114:8736-8738 (1992).	
	49	Katritzky, et al., "Pyridylethylation - A New Protection Method for Active Hydrogen Compounds," <i>Tetrahedron Letters</i> , 25(12):1223-1226 (1984).	
	50	Kelley, S.O. and J.K. Barton, "Electrochemistry of Methylene Blue Bound to a DNA-Modified Electrode," <i>Bioconjugate Chem.</i> , 8:31-37 (1997).	
	51	Kojima et al., "A DNA Probe of Ruthenium Bipyridine Complex Using Photocatalytic Activity," <i>Chemistry Letter</i> , pp 1889-1982 (1989).	
	52	Laviron, E., "A.C. Polarography and Faradaic Impedance of Strongly Adsorbed Electroactive Species. Part I: Theoretical and Experimental Study of a Quasi-Reversible Reaction in the Case of a Langmuir Isotherm," <i>J. Electroanal. Chem.</i> , 97:135-149 (1979).	
	53	Laviron, E., "A.C. Polarography and Faradaic Impedance of Strongly Adsorbed Electroactive Species. Part III: Theoretical Complex Plane Analysis for a Surface Redox Reaction," <i>J. Electroanal. Chem.</i> , 105:35-42 (1979).	
WV			
EXAMINER		DATE CONSIDERED	
A. Bove		9/98	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

INFORMATION DISCLOSURE CITATION



PTO-1449

 ATTY. DOCKET NO.
A-64558-1/RFT/RMS

 SERIAL NO.
08/873,597

 APPLICANT
Kayyem, et al.

 FILING DATE
June 12, 1997

 GROUP
Not Assigned


OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

MSH	54	Lee, et al., "Direct Measurement of the Forces Between Complementary Strands of DNA," <i>Science</i> , 266:771-773 (1994).
	55	Lenhard, J.R., et al., "Part VII Covalent Bonding of a Reversible- Electrode Reactant to Pt Electrodes Using an organosilane Reagent" <i>J. Electroanal. Chem.</i> , 78:195-201 (1977).
	56	Lipkin "Identifying DNA by the Speed of Electrons," <i>Science News</i> , 147(8):117 (1995).
	57	Maskos, et al., "Oligonucleotide hybridisations on glass supports: a novel linker for oligonucleotide synthesis and hybridisation properties of oligonucleotides synthesised <i>in situ</i> ," <i>Nucleic Acids Research</i> , 20(7):1679-1684 (1992).
	58	Mazzocchi, Ph.H. and G. Fritz, "Photolysis of N-(2-Methyl-2-Propenyl)phthalimide in Methanol. Evidence Supporting Radical-Radical Coupling of a Photochemically Generated Radical Ion Pair," <i>Journal of the American Chemical Society</i> , 108(18):5361-5362 (1986).
	59	McGee, et al., "2'-Amino-2'-deoxyuridine <i>via</i> an Intramolecular Cyclization of a Trichloroacetimidate," <i>J. Org. Chem.</i> , 61:781-785 (1996).
	60	Meade, T. J., "Driving-Force Effects on the Rate of Long-Range Electron Transfer in Ruthenium-Modified Cytochrome c," <i>J. Am. Chem. Soc.</i> , 111:4353-4356 (1989).
	61	Meade, T. J., et al., "Electron Transfer through DNA: Site-Specific Modification of Duplex DNA with Ruthenium Donors and Acceptors," <i>Angew Chem. Int. Ed. Engl.</i> , 34:352 (1995).
	62	Mestel, "'Electron Highway' Points to Identity of DNA," <i>New Scientist</i> , p. 21 (1995).
	63	Millan, et al., "Voltammetric DNA Biosensor for Cystic Fibrosis Based on a Modified Carbon Paste Electrode," <i>Anal. Chem.</i> , 66:2943-2948 (1994).
	64	Millan, K.M., et al., "Covalent Immobilization of DNA onto Glassy Carbon Electrodes," <i>Electroanalysis</i> , 4:929-932 (1992).
	65	Millan, K.M. and Mikkelsen, S.R., "Sequence-Selective Biosensor for DNA Based on Electroactive Hybridization Indicators," <i>Anal. Chem.</i> , 65:2317-2323 (1993).

EXAMINER

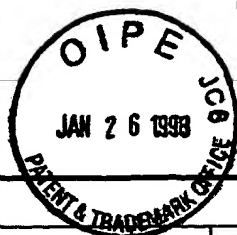
DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 563615

INFORMATION DISCLOSURE CITATION  PTO-1449		ATTY. DOCKET NO. A-64558-1/RFT/RMS	SERIAL NO. 08/873,597
		APPLICANT Kayyem, et al.	
		FILING DATE June 12, 1997	GROUP Not Assigned
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)			
66 Miller, C., "Absorbed ω -Hydroxy Thiol Monolayers on Gold Electrodes: Evidence for Electron Tunneling to Redox Species in Solution," <i>J. Phys. Chem.</i> , 95:877-886 (1991).	67 Murphy, C. J., et al., "Long-Range Photoinduced Electron Transfer Through a DNA Helix," <i>Science</i> , 262:1025-1029 (1993).	68 Orellana, G., et al., "Photoinduced Electron Transfer Quenching of Excited Ru(II) Polypyridyls Bound to DNA: The Role of the Nucleic Acid Double Helix," <i>Photochemistry and Photobiology</i> , 54(4):499-509 (1991).	69 Palecek, "From Polarography of DNA to Microanalysis with Nucleic Acid-Modified Electrodes," <i>Electroanalysis</i> , 8(1):7-14 (1996).
70 Paterson, "Electric Genes: Current Flow in DNA Could Lead to Faster Genetic Testing," <i>Scientific American</i> , 33-34 (May 1995).	71 Purugganan, M. D., et al., "Accelerated Electron Transfer Between Metal Complexes Mediated by DNA," <i>Science</i> , 241:1645-1649 (1988).	72 Rhodes, D. And A. Klug, "Helical Periodicity of DNA Determined by Enzyme Digestion," <i>Nature</i> , 286:573-578 (1980).	73 Risser, S. M., et al., "Electron Transfer in DNA: Predictions of Exponential Growth and Decay of Coupling with Donor-Acceptor Distance," <i>J. Am. Chem. Soc.</i> , 115(6):2508-2510 (1993).
74 Sato, Y., et al., "Unidirectional Electron Transfer at Self-Assembled Monolayers of 11-Ferrocenyl-1-undecanethiol on Gold," <i>Bull. Chem. Soc. Jpn.</i> , 66(4):1032-1037 (1993).	75 Satyanarayana, S., et al., "Neither Δ - nor Λ -Tris(phenanthroline)ruthenium(II) Binds to DNA by Classical Intercalation," <i>Biochemistry</i> , 31(39):9319-9324 (1992).	76 Schreiber, et al., "Bis(purine) Complexes of $trans$ - a_2Pt^{II} : Preparation and X-ray Structures of Bis(9-methyladenine) and Mixed 9-Methyladenine, 9-Methylguanine Complexes and Chemistry Relevant to Metal-Modified Nucleobase Triples and Quartets," <i>J. Am. Chem. Soc.</i> 118:4124-4132 (1996).	
EXAMINER <i>A. Mount</i> <i>m. jason</i> DATE CONSIDERED <i>9/98</i>			

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 563615

INFORMATION DISCLOSURE CITATION



PTO-1449

 ATTY. DOCKET NO.
A-64558-1/RFT/RMS

 SERIAL NO.
08/873,597

 APPLICANT
Kayyem, et al.

 FILING DATE
June 12, 1997

 GROUP
Not Assigned

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

77	Schuhmann, W., et al., "Electron Transfer between Glucose Oxidase and Electrodes via Redox Mediators Bound with Flexible Chains to the Enzyme Surface," <i>J. Am. Chem. Soc.</i> , 113:1394-1397 (1991).
78	Schumm, et al., "Iterative Divergent/Convergent Approach to Linear Conjugated Oligomers by Successive Doubling of the Molecular Length: A Rapid Route to a 128 Å-Long Potential Molecular Wire," <i>Angew. Chem. Int. Ed. Engl.</i> , 33(11):1360-1363 (1994).
79	Sigal et al., "A Self-Assembled Monolayer for the Binding and Study of Histidine-Tagged Proteins by Surface Plasmon Resonance," <i>Anal. Chem.</i> , 68(3):490-497 (1996).
80	Southern, et al., "Arrays of complementary oligonucleotides for analysing the hybridisation behaviour of nucleic acids," <i>Nucleic Acids Research</i> , 22(8):1368-1373 (1994).
81	Strobel, S. A., et al., "Site-Specific Cleavage of a Yeast Chromosome by Oligonucleotide-Directed Triple-Helix Formation," <i>Science</i> , 249:73-75 (1990).
82	Su, et al., "Interfacial Nucleic Acid Hybridization Studied by Random Primer ³² P Labelling and Liquid-Phase Acoustic Network Analysis," <i>Analytical Chemistry</i> , 66(6):769-777 (1994).
83	Telser, J., et al., "DNA Duplexes Covalently Labeled at Two Sites: Synthesis and Characterization by Steady-State and Time-Resolved Optical Spectroscopies," <i>J. Am. Chem. Soc.</i> , 111:7226-7232 (1989).
84	Telser, J., et al., "DNA Oligomers and Duplexes Containing a Covalently Attached Derivative of Tris(2,2'-bipyridine)ruthenium(II): Synthesis and Characterization by Thermodynamic and Optical Spectroscopic Measurements," <i>J. Am. Chem. Soc.</i> , 111:7221-7226 (1989).
85	Tour, "Conjugated Macromolecules of Precise Length and Constitution. Organic Synthesis for the Construction of Nanoarchitectures," <i>Chem. Rev.</i> , 96:537-553 (1996).
86	Tour, et al., "Self-Assembled Monolayers and Multilayers of Conjugated Thiols, α-ω-Dithiols, and Thioacetyl-Containing Adsorbates. Understanding Attachments between Potential Molecular Wires and Gold Surfaces," <i>J. Am. Chem. Soc.</i> , 117:9529-9534 (1995).
87	Tullius, T.D. and B.A. Dombroski, "Iron(II) EDTA Used to Measure the Helical Twist Along Any DNA Molecule," <i>Science</i> , 230:679-681 (1985).

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

563615

INFORMATION DISCLOSURE CITATION

PTO-1449

ATTY. DOCKET NO.
A-64558-1/RFT/RMSSERIAL NO.
08/873,597APPLICANT
Kayyem, et al.FILING DATE
June 12, 1997GROUP
Not Assigned

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

MSL	88	Turro, N., et al. "Photoelectron Transfer Between Molecules Adsorbed in Restricted Spaces," <i>Photochem. Convers. Storage Sol. Energy, Proc. Int. Conf., 8th</i> , pp 121-139 (1990).
	89	Turro, N. J., et al., "Molecular Recognition and Chemistry in Restricted Reaction Spaces. Photophysics and Photoinduced Electron Transfer on the Surfaces of Micelles, Dendrimers, and DNA," <i>Acc. Chem. Res.</i> , 24:332-340 (1991).
	90	Uosake, K., et al., "A Self-Assembled Monolayer of Ferrocenylalkane Thiols on Gold as an Electron Mediator for the Reduction of Fe(III)-EDTA in Solution," <i>Electrochimica Acta.</i> , 36(11/12):1799-1801 (1991).
	91	Van Ness, J., et al., "A Versatile Solid Support System for Oligodeoxynucleotide Probe-Based Hybridization Assays," <i>Nucleic Acids Research</i> , 19(12):3345-3349 (1991).
	92	Weber, et al., "Voltammetry of Redox-Active Groups Irreversibly Adsorbed onto Electrodes. Treatment Using the Marcus Relation between Rate and Overpotential," <i>Anal. Chem.</i> , 66:3164-3172 (1994).
	93	Williams, et al., "Studies of oligonucleotide interactions by hybridisation to arrays: the influence of dangling ends on duplex yield," <i>Nucleic Acids Research</i> , 22(8):1365-1367 (1994).
	94	Winkler, J. R., et al., "Electron Transfer in Ruthenium-Modified Proteins," <i>Chem. Rev.</i> , 92:369-379 (1992).
	95	Xu, et al., "Immobilization of DNA on an Aluminum(III) alkaneobisphosphonate Thin Film with Electrogenenerated Chemiluminescent Detection," <i>J. Am. Chem. Soc.</i> , 116:8386-8387 (1994).
	96	Xu, et al., "Immobilization and Hybridization of DNA on an Aluminum(III) Alkanebisphosphonate Thin Film with Electrogenenerated Chemiluminescent Detection," <i>J. Am. Chem. Soc.</i> , 117:2627-2631 (1995).
	97	Yang, et al., "Growth and Characterization of Metal(II) Alkaneobisphosphonate Multilayer Thin Films on Gold Surfaces," <i>J. Am. Chem. Soc.</i> , 115:11855-11862 (1993).
	98	Zhou, et al., "Fluorescent Chemosensors Based on Energy Migration in Conjugated Polymers: The Molecular Wire Approach to Increased Sensitivity," <i>J. Am. Chem. Soc.</i> , 117:12593-12602 (1995).
	99	Mucic et al., "Synthesis and Characterization of DNA with Ferrocenyl Groups Attached to their 5'-Termini: Electrochemical Characterization of a Redox-Active Nucleotide Monolayer," <i>Chem. Commun.</i> , pp. 555-557 (1996).

EXAMINER

DATE CONSIDERED

INFORMATION DISCLOSURE CITATION

PTO-1449

ATTY. DOCKET NO.
A-64558-1/RFT/RMSSERIAL NO.
08/873,597APPLICANT
KAYYEM et al.FILING DATE
June 12, 1997GROUP
Not Yet Assigned

U.S. PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
MSH	KK 4,840,893	6/20/89	Hill et al.	435	6	
MSH	LL 5,403,451	4/4/95	Riviello et al.	204	153.1	
MSH	MM 5,620,850	4/15/97	Bamdad et al.	530	300	

FOREIGN PATENT DOCUMENTS

EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
						Yes	No
MSH	NN 0515615	9/4/96	EP (UK)				
MSH	OO 97/01646	1/16/97	WO				
MSH	PP 93/23425	11/25/93	WO				
MSH	QQ 90/05732	5/31/90	WO				

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

MSH	100	Carr et al., "Novel Electrochemical Sensors for Neutral Molecules," <i>Chem. Commun.</i> , 1649-1650 (1997).
MSH	101	Carter et al., "Voltammetric Studies of the Interaction of Metal Chelates with DNA. 2. Tris-Chelated Complexes of Cobalt(III) and Iron(III) with 10-Phenanthroline and 2,2'-Bipyridine," <i>J. Am. Chem. Soc.</i> , 11:8901-8911 (1989).
MSH	102	Johnston et al., "Trans-Dioxorhenium(V)-Mediated Electrocatalytic Oxidation of DNA at Indium Tin-Oxide Electrodes: Voltammetric Detection of DNA Cleavage in Solution," <i>Inorg. Chem.</i> , 33:6388-6390 (1994).

EXAMINER

DATE CONSIDERED